

G-10 Fiberglass Epoxy Laminate Sheet

Category : Polymer , Thermoset , Epoxy , Filled/Reinforced Thermoset

Material Notes:

This glass-epoxy laminate is specified for its extremely high strength and high dimensional stability over temperature. G-10 is used for terminal boards, high humidity applications, electrical and electronic test equipment and electric rotor insulation. G-10 is difficult to cut or machine and may require special equipment. G-10 is slightly stronger while G-11 is a better insulator and can withstand higher temperatures. FR-4 is a fire-retardant G-10 glass-epoxy laminate that is used primarily in the printed circuit board industry. G-10 and similar fiberglass reinforced thermosets are sometimes known as garolite. Information provide by Boedeker Plastics.

Order this product through the following link:

http://www.lookpolymers.com/polymer_G-10-Fiberglass-Epoxy-Laminate-Sheet.php

Physical Properties	Metric	English	Comments
Density	1.80 g/cc	0.0650 lb/in ³	ASTM D792
Water Absorption	0.10 %	0.10 %	24 hrs.; ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	110	110	ASTM D785
Tensile Strength at Break	262 MPa	38000 psi	Crosswise; ASTM D638
	310 MPa	45000 psi	Lengthwise; ASTM D638
Flexural Strength	448 MPa	65000 psi	Crosswise; ASTM D790
	517 MPa	75000 psi	Lengthwise; ASTM D790
Flexural Modulus	16.5 GPa	2400 ksi	Crosswise; ASTM D790
	18.6 GPa	2700 ksi	Lengthwise; ASTM D790
Compressive Strength	448 MPa	65000 psi	ASTM D695
Izod Impact, Notched	6.41 J/cm	12.0 ft-lb/in	Crosswise; ASTM D256
	7.47 J/cm	14.0 ft-lb/in	Lengthwise; ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	9.90 $\mu\text{m}/\text{m}\cdot\text{°C}$	5.50 $\mu\text{in}/\text{in}\cdot\text{°F}$	Lengthwise; ASTM D696
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	11.9 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.61 $\mu\text{in}/\text{in}\cdot\text{°F}$	Crosswise; ASTM D696
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Thermal Properties	0.288 W/m-K Metric	2.00 BTU-in/hr-ft ² -F English	ASTM C177 Comments
Maximum Service Temperature, Air	140 °C	284 °F	
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Dielectric Constant	5.0 @Frequency 1e+6 Hz	5.0 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	31.5 kV/mm	800 kV/in	Short Time; 1/8 inch; ASTM D149
Dissipation Factor	0.019 @Frequency 1e+6 Hz	0.019 @Frequency 1e+6 Hz	ASTM D150
Arc Resistance	100 sec	100 sec	ASTM D495

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